We Claim:

1. A bistable FLC device which comprises a chiral nonracemic liquid crystal material which exhibits a de Vries smectic A phase aligned in bookshelf structure wherein the chiral liquid crystal material has not been previously identified as a bookshelf liquid crystal material.

2. The bistable device of claim 1 wherein the chiral liquid crystal material comprises a chiral nonracemic liquid crystal compound having a liquid crystal core containing one or more aromatic groups and a chiral tail group.

3. The bistable device of claim 2 wherein the liquid crystal core comprises a dehydronapthalene group.

4. The bistable device of claim 2 wherein the liquid crystal core comprises a napthalene group.

5. The bistable device of claim 2 wherein the liquid crystal core does not comprise a napthalene group.

6. The bistable device of claim 2 wherein the liquid crystal core comprises a group selected from the group consisting of phenyl pyrimidine, phenyl benzoate, biphenyl benzoate, and biphenyl.

7. The bistable device of claim 2 wherein the chiral tail group is a swallow tail group.

8. The bistable device of claim 2 wherein the chiral tail group comprises a terminal fluorocarbon group.

9. The bistable device of claim 2 wherein the chiral tail group has the formula:

$$-COO-CH^*(A)-(CH_2)_mOC_nH_{2n+1}$$

where * indicates an asymmetric carbon, A can be $-CH_3$, $-C_2H_5,CF_3$, or $-C_2F_5$, and m and n are integers ranging from 2-20.

10. The bistable device of claim 9 wherein A is $-CF_3$, or $-C_2F_5$.

11. The bistable device of claim 9 wherein n and n are integers ranging from 2-4.

12. The bistable device of claim 2 wherein the chiral tail group has the formula:

$$-COO-CH^*(A)-R$$

where A is $-CH_3$, $-C_2H_5$, $-CF_3$, or $-C_2F_5$, and R is an ether, fluoroether, alkyl or fluoroalkyl group.

13. The bistable device of claim 1 wherein the chiral nonracemic liquid crystal material comprises a siloxane group.

14. The bistable device of claim 1 wherein the chiral nonracemic liquid crystal material is an antiferroelectric material.

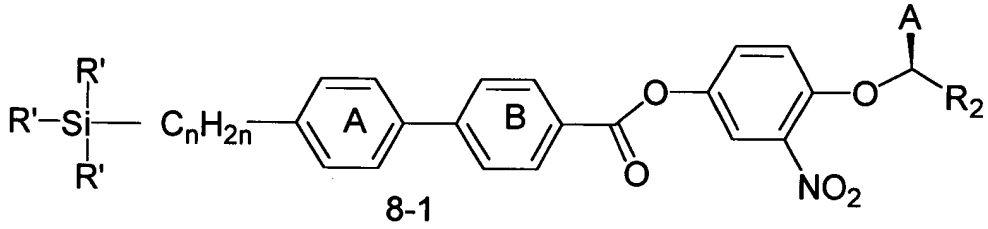
15. The bistable device of claim 1 wherein the chiral nonracemic liquid crystal material is a material that exhibits V-shaped switching in an analog FLC cell.

16. The bistable device of claim 1 wherein the chiral nonracemic liquid crystal material comprises chiral nonracemic W399, W415 or mixtures thereof.

17. The bistable device of claim 1 wherein the chiral nonracemic liquid crystal material further comprises an achiral or racemic liquid crystal compound.

18. The bistable device of claim 17 wherein the racemic liquid crystal compound is the racemate of W399, W415 or a mixture thereof.

19. The bistable device of claim 1 wherein the chiral nonracemic liquid crystal compound comprises a chiral racemic, achiral or racemic compound of the formula:

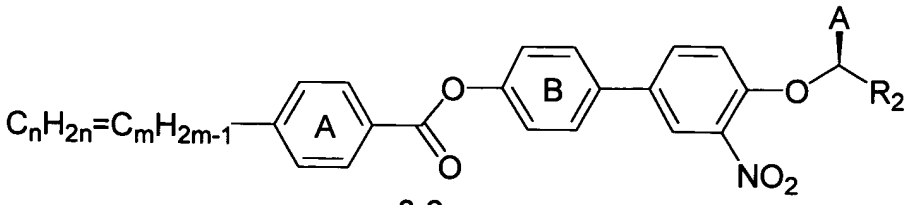


8-1

where A is F, $-CH_3$, $-C_2H_5$, $-CF_3$, or $-C_2F_5$,
n is an integer ranging from 6 to 12,
R' is a small alkyl group having from 1-6 carbon atoms,
R2 is an alkyl, fluoroalkyl, ether or fluorether group and
The A and B rings can each be substitued with one or two fluorines.

20. The bistable device of claim 19 wherein the compound of the formula given is chiral nonracemic.

21. The bistable device of claim 1 wherein the chiral nonracemic liquid crystal compound comprises a chiral racemic, achiral or racemic compound of the formula:



8-2

where A is F, $-CH_3$, $-C_2H_5$, $-CF_3$, or $-C_2F_5$,
n and m are integers ranging from 1 to 12,
R_2 is an alkyl, fluoroalkyl, ether or fluorether group and
the A and B rings can each be substituted with one or two fluorines.

22. The bistable device of claim 21 wherein n = m.

23. The bistable device of claim 22 wherein n + m is 6-12.

24. The bistable device of claim 21 wherein A is $-CH_3$.

25. An analog FLC device which comprises a chiral nonracemic liquid crystal material which exhibits a de Vries smectic A phase wherein the chiral liquid crystal material has not been previously identified as a V-shaped switching liquid crystal material.

26. The analog device of claim 25 wherein the chiral liquid crystal material comprises a chiral nonracemic liquid crystal compound having a liquid crystal core containing one or more aromatic groups and a chiral tail group.

27. The analog device of claim 26 wherein the liquid crystal core comprises a napthalene group.

28. The analog device of claim 26 wherein the liquid crystal core comprises a dehydronapthalene group.

29. The analog device of claim 26 wherein the liquid crystal core comprises a group selected from the group consisting of phenyl pyrimidine, phenyl benzoate, biphenyl benzoate, and biphenyl.

30. The analog device of claim 26 wherein the chiral liquid crystal tail comprises a chiral fluorinated terminal portion.

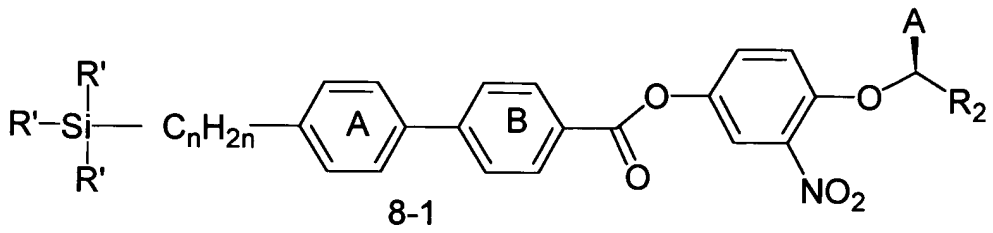
31. The analog device of claim 30 wherein the liquid crystal core is a phenyl pyrimidine.

32. The analog device of claim 25 wherein the chiral nonracemic liquid crystal material comprises chiral nonracemic W399, M415 or mixtures thereof.

33. The analog device of claim 25 wherein the chiral nonracemic liquid crystal material further comprises an achiral or racemic liquid crystal compound.

34. The analog device of claim 33 wherein the racemic liquid crystal compound is the racemate of W399, W415 or a mixture thereof.

35. The analog device of claim 25 wherein the chiral nonracemic liquid crystal compound comprises a chiral racemic, achiral or racemic compound of the formula:

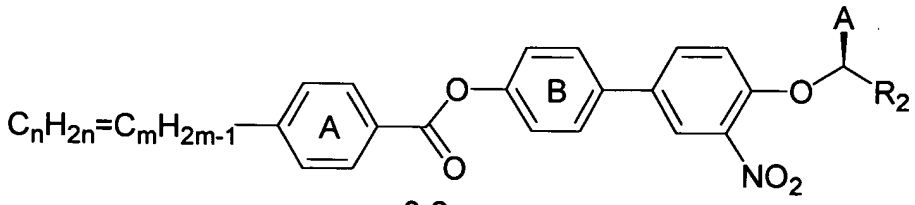


8-1

where A is F, $-CH_3$, $-C_2H_5$, $-CF_3$, or $-C_2F_5$,
n is an integer ranging from 6 to 12,
R' is a small alkyl group having from 1-6 carbon atoms,
R2 is an alkyl, fluoroalkyl, ether or fluorether group and
The A and B rings can each be substituted with one or two fluorines.

36. The analog device of claim 35 wherein the compound of the formula given is chiral nonracemic.

37. The bistable device of claim 25 wherein the chiral nonracemic liquid crystal compound comprises a chiral racemic, achiral or racemic compound of the formula:



8-2

where A is F, $-CH_3$, $-C_2H_5$, $-CF_3$, or $-C_2F_5$,
n and m are integers ranging from 1 to 12,
R_2 is an alkyl, fluoroalkyl, ether or fluorether group and
the A and B rings can each be substituted with one or two fluorines.

38. The analog device of claim 37 wherein n = m.

39. The analog device of claim 38 wherein n + m is 6-12.

40. The analog device of claim 37 wherein A is $-CH_3$.

41. The analog device of claim 25 wherein the chiral nonracemic liquid crystal material is a bookshelf material that exhibits a de Vries smectic A phase.

42. A method for identifying a chiral nonracemic liquid crystal material useful in both bistable SSFLC devices and analog devices which comprises the step of:

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> assaying the chiral nonracemic liquid crystal material for the presence of a deVries smectic A phase the presence of the phase being indicative of that the material will exhibit bookshelf geometry and V-shaped switching when introduced into the appropriate FLC device configurations.

43. The method of claim 42 wherein infrared dichroism measurements are made to detect the presence of the de Vries smectic A phase.

44. The method of claim 42 wherein the chiral nonracemic liquid crystal material is a V-shaped switching material.

45. The method of claim 42 wherein the chiral nonracemic liquid crystal material is an antiferroelectric liquid crystal material.

46. The method of claim 42 wherein the chiral nonracemic liquid crystal material comprises a swallow-tailed liquid crystal.

47. The method of claim 42 wherein the chiral nonracemic liquid crystal material comprises a liquid crystal dimer.

48. The method of claim 47 wherein the dimer comprises a siloxane group.

49. The method of claim 42 wherein the chiral nonracemic liquid crystal material exhibits a tilted smectic phase.

50. The method of claim 42 wherein the chiral nonracemic liquid crystal material exhibits a chiral smectic C phase.

51. The method of claim 49 wherein the chiral nonracemic liquid crystal material exhibits the phase sequence I $\rightarrow$SmA $\rightarrow$SmC* and the smectic A phase is a de Vries smectic A phase over a useful portion of the SmA phase.